

**THE TOTAL COST OF FIRE  
IN THE UNITED STATES**

**John R. Hall, Jr.**

**March 2010**



**National Fire Protection Association  
Fire Analysis and Research Division**

## **Abstract**

The total cost of fire in the United States, as it is defined, is a combination of the losses caused by fire and the money spent on fire prevention, protection and mitigation to prevent worse losses, by preventing them, containing them, detecting them quickly, and suppressing them effectively. For 2007, that total cost is estimated at \$347 billion, or roughly 2.5% of U.S. gross domestic product. Economic loss (property damage) – reported or unreported, direct or indirect – represents only \$18.6 billion of this total. The net costs of insurance coverage (\$17.2 billion), the cost of career fire departments (\$36.8 billion), building costs for fire protection (\$61.5 billion), other economic costs (\$42.3 billion), the monetary value of donated time from volunteer firefighters (\$128 billion), and the estimated monetary equivalent for the deaths and injuries due to fire (\$42.4 billion), all are larger components than property loss.

Keywords: fire statistics, cost, loss estimates, fire losses, economic loss

## **Acknowledgements**

The National Fire Protection Association thanks all the fire departments and state fire authorities who participate in the National Fire Incident Reporting System (NFIRS) and the annual NFPA fire experience survey. These firefighters are the original sources of the detailed data that make this analysis possible. Their contributions allow us to estimate the size of the fire problem. We are also grateful to the U.S. Fire Administration for its work in developing, coordinating, and maintaining NFIRS.

We are grateful to the Insurance Information Institute and the U.S. Census Bureau for expenditure and loss data used in this report.

For more information about the National Fire Protection Association, visit [www.nfpa.org](http://www.nfpa.org) or call 617-770-3000. To learn more about the One-Stop Data Shop go to [www.nfpa.org/osds](http://www.nfpa.org/osds) or call 617-984-7443.

Copies of this analysis are available from:

National Fire Protection Association  
One-Stop Data Shop  
1 Batterymarch Park  
Quincy, MA 02169-7471  
[www.nfpa.org](http://www.nfpa.org)  
e-mail: [osds@nfpa.org](mailto:osds@nfpa.org)  
phone: 617-984-7443

NFPA No. USS13  
Copyright © 2010, National Fire Protection Association, Quincy, MA

## Executive Summary

In 2007, economic loss (property damage) due to fire (direct and indirect, reported and unreported) totaled an estimated \$18.6 billion. After adjustment for inflation using the Consumer Price Index, this represented a 13% decrease from 1980.

In 2007, economic costs of fire other than economic losses included: the cost of career fire departments (\$36.8 billion, up 156% from 1980 after adjusting for inflation), the net difference between fire-related insurance premiums paid and NFPA's estimate of economic losses eligible for insurance coverage (\$17.2 billion, up 67% from 1980 after adjusting for inflation), and new building construction costs for fire protection (\$61.5 billion, up 130% from 1980 after adjusting for inflation).

The core total cost of fire is defined as the sum of economic loss and these three other cost estimates and therefore was \$134.2 billion in 2007, up 86% from 1980 after adjusting for inflation.

Going beyond the core total cost, economic costs that are not re-estimated each year but only updated for inflation cost an estimated \$42.3 billion in 2007. Human losses are estimated at \$42.5 billion, using formulas developed by the U.S. Consumer Product Safety Commission and with acknowledgement that no amount of money can compensate for the loss of a loved one. The monetary value of donated time from volunteer firefighters is estimated at \$128 billion.

Therefore, the complete total cost of fire is estimated at \$347 billion, or roughly 2.5% of U.S. gross domestic product.

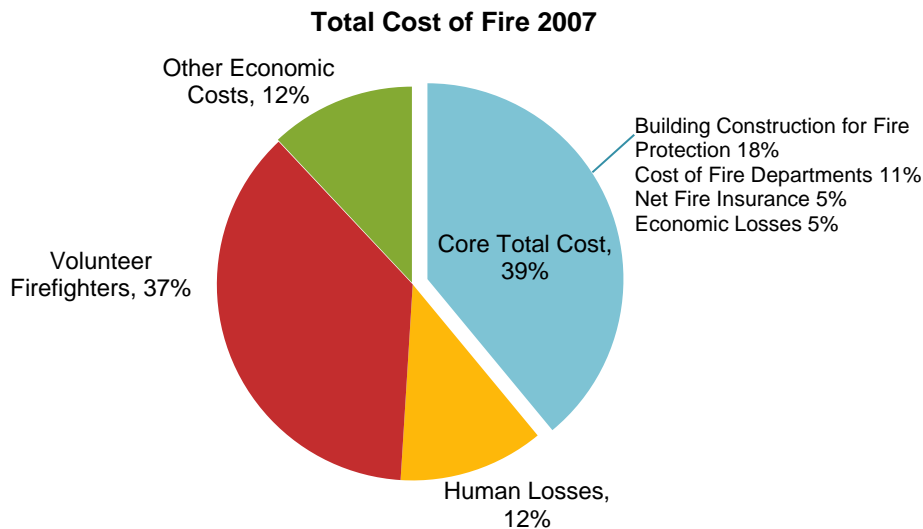
# Table of Contents

	<b>Page</b>
Executive Summary	i
Table of Contents	ii
Fact Sheet	iii
Introduction	1
Estimates of Economic Loss	2
Costs of Fire Departments	6
Net Fire Insurance	7
Building Construction for Fire Protection	9
Summary of the Core of Total Cost of Fire	11
Other Fire Protection Costs	19
Estimates of Human Loss	20
Value of Donated Time of Volunteer Firefighters	22
Conclusion	24

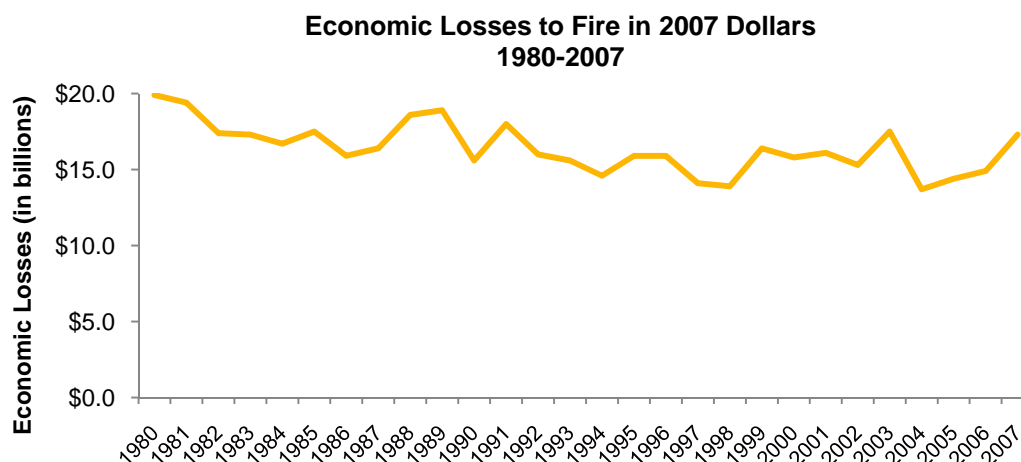


## The Total Cost of Fire in 2007

In 2007, the total cost of fire was an estimated \$347 billion, or 2.5 percent of U.S. gross domestic product (GDP). The total cost of fire includes the losses that fire causes, such as human losses (e.g., lives lost, medical treatment of injuries, pain and suffering) and economic losses (e.g., property damage, business interruption); and the cost of provisions to prevent or mitigate the cost of fire, such as fire departments, insurance, and fire protection equipment and construction.



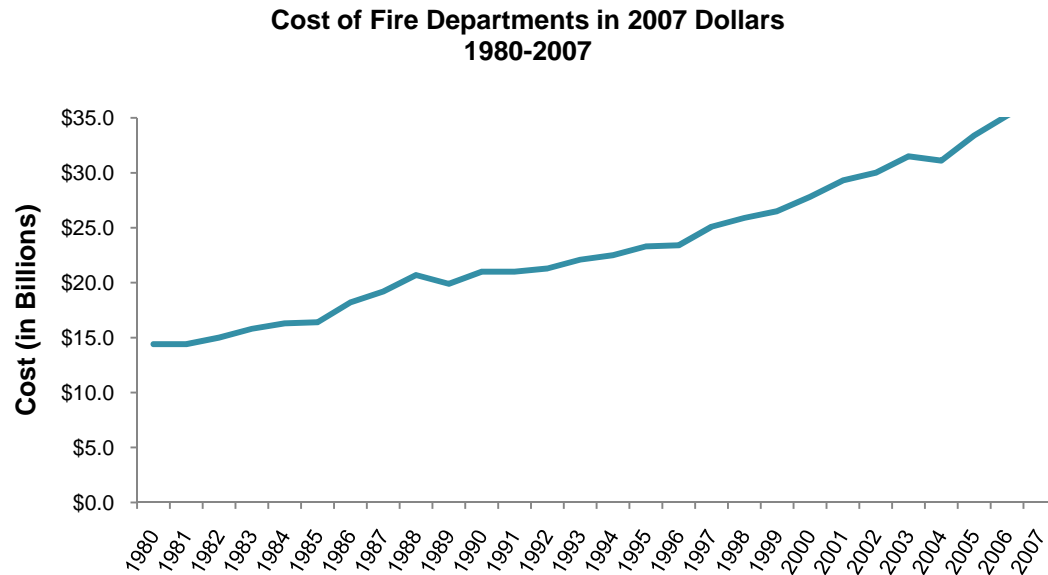
In 2007, economic losses to fire (direct and indirect, reported and unreported) totaled an estimated **\$18.6 billion**.



**FACT:** Fires in 2007 caused \$16.6 billion in reported or unreported direct property damage which was 90% of economic loss that year. The other 10% was indirect loss, such as business interruption.

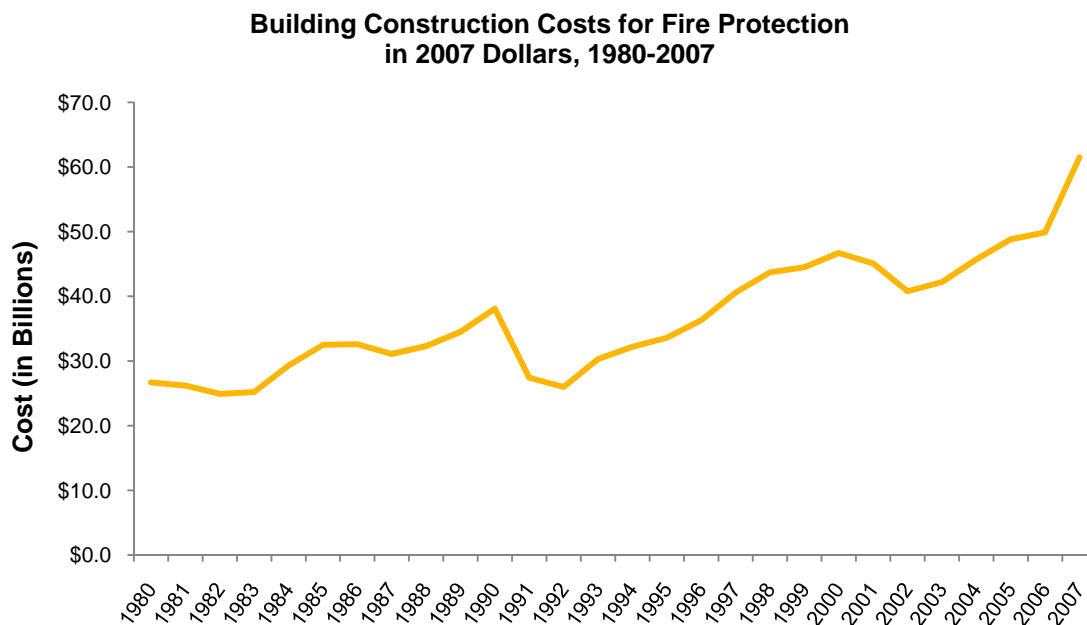
The year 2001 excludes the events of September 11.

Career fire departments<sup>1</sup> cost **\$36.8 billion** in 2007.



**FACT:** Part of increase in fire department cost is due to shift from volunteer to career fire departments.

Building construction for fire protection cost an estimated **\$61.5 billion** in 2007.



**FACT:** Building construction costs include passive protection, such as compartmentation, and active protection, such as detection and sprinkler systems.

<sup>1</sup>A fire department is a public or private organization that provides fire prevention, fire suppression, and associate emergency and non-emergency services to a jurisdiction such as a county, municipality, or organized fire district.